The New DoD Systems Acquisition Process

KEY FOCUS AREAS

- **Deliver advanced technology to warfighters faster**
  - ➔ Rapid acquisition with demonstrated technology
  - ➔ Full system demonstration before commitment to production
- **Reduce total ownership costs and improve affordability**
  - ➔ Cost as a requirement that drives design, procurement, and support
  - ➔ Increased competition
- **Deploy interoperable and supportable systems**
  - ➔ Interoperability demonstrated prior to production
  - ➔ Integration of acquisition and logistics
  - ➔ Improved software management

Improved performance (including quality) at lower cost.

PROBLEMS WITH 1996 POLICY

- **Only addresses systems acquisition - not total acquisition system**
- **Treats evolutionary approaches and innovations as "non-traditional" excursions**
- **Endorses "tailoring" but provides no amplifying guidance to assist acquisition strategy development**
- **Provides no firm decision criteria**

<u>Our current process and practices</u>:

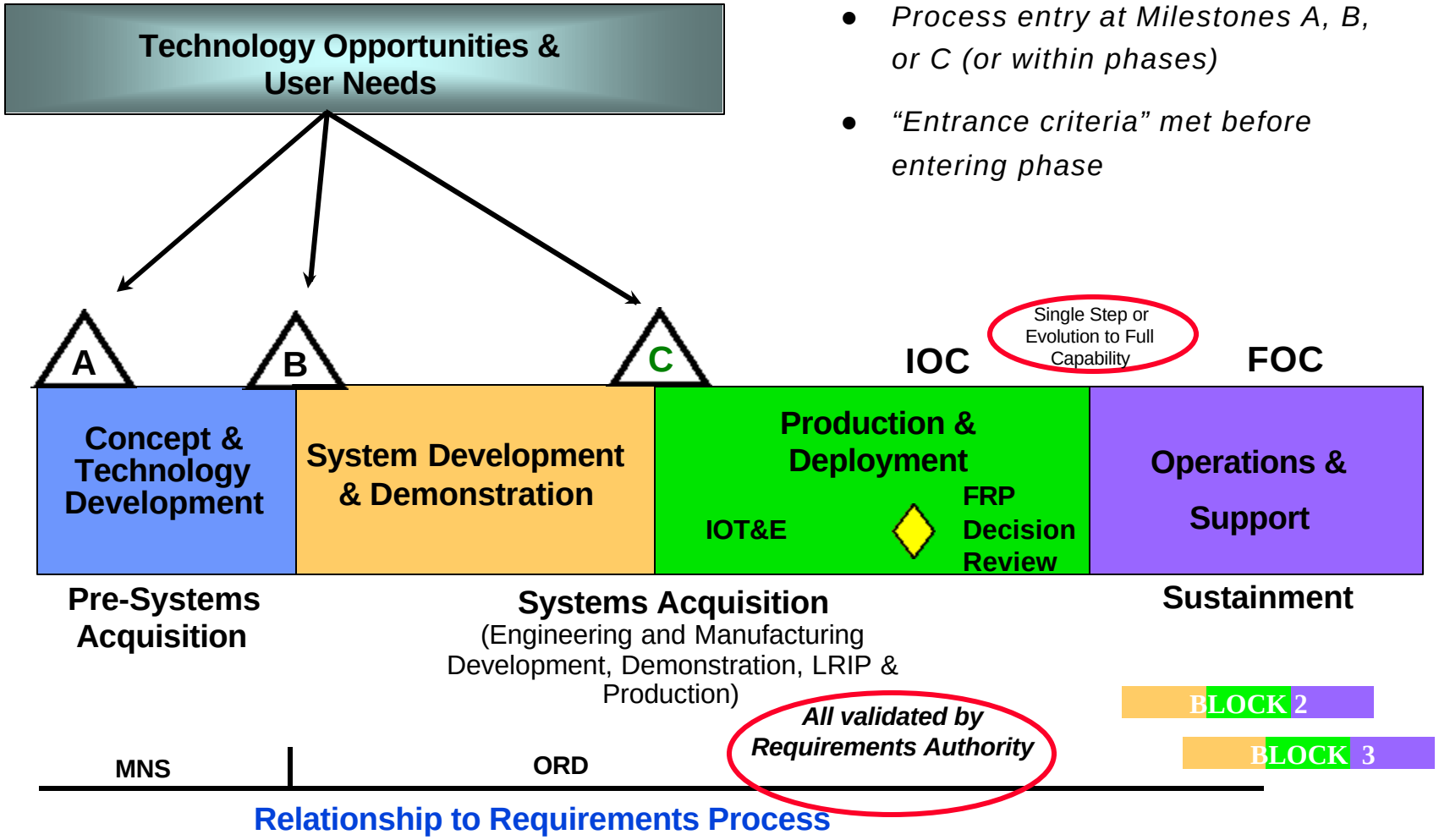
- **Take too long and cost too much**
- **Are incompatible with modern technology cycles**

Deliver Advanced Technology Faster

New Model

- ***Technology opportunity* and *mission need present*** - before entering acquisition process
- ***Multiple process paths*** - not just one way of entering systems acquisition and commercial products allow later entry
- ***Evolutionary acquisition*** - based on *time-phased requirements* - preferred (but not only) approach
- **Technology development *separated* from systems integration -** achieve proven technology before beginning systems-level work at Milestone B
- **"LRIP" *more important* Departmental *commitment*** - than "Full Rate"
- ***"Entrance criteria"* met** -- before entering next phase
- ***Operations, Support, and Disposal*** - part of acquisition process

The 5000 Model



- *Process entry at Milestones A, B, or C (or within phases)*
- *"Entrance criteria" met before entering phase*

Deliver Advanced Technology Faster (con't)

Test and Evaluation

- **Test & Evaluation will be *integrated* throughout the acquisition process -** early, up-front involvement of T&E community in requirements process and design of an integrated test strategy and early operational assessments

- **Adapt T&E approaches for *Evolutionary* developments**

- **Test & Evaluation is conducted for two purposes- *discovery*** during system development and ***confirmation*** of system performance after development

Deliver Advanced Technology Faster (con't)

Funding

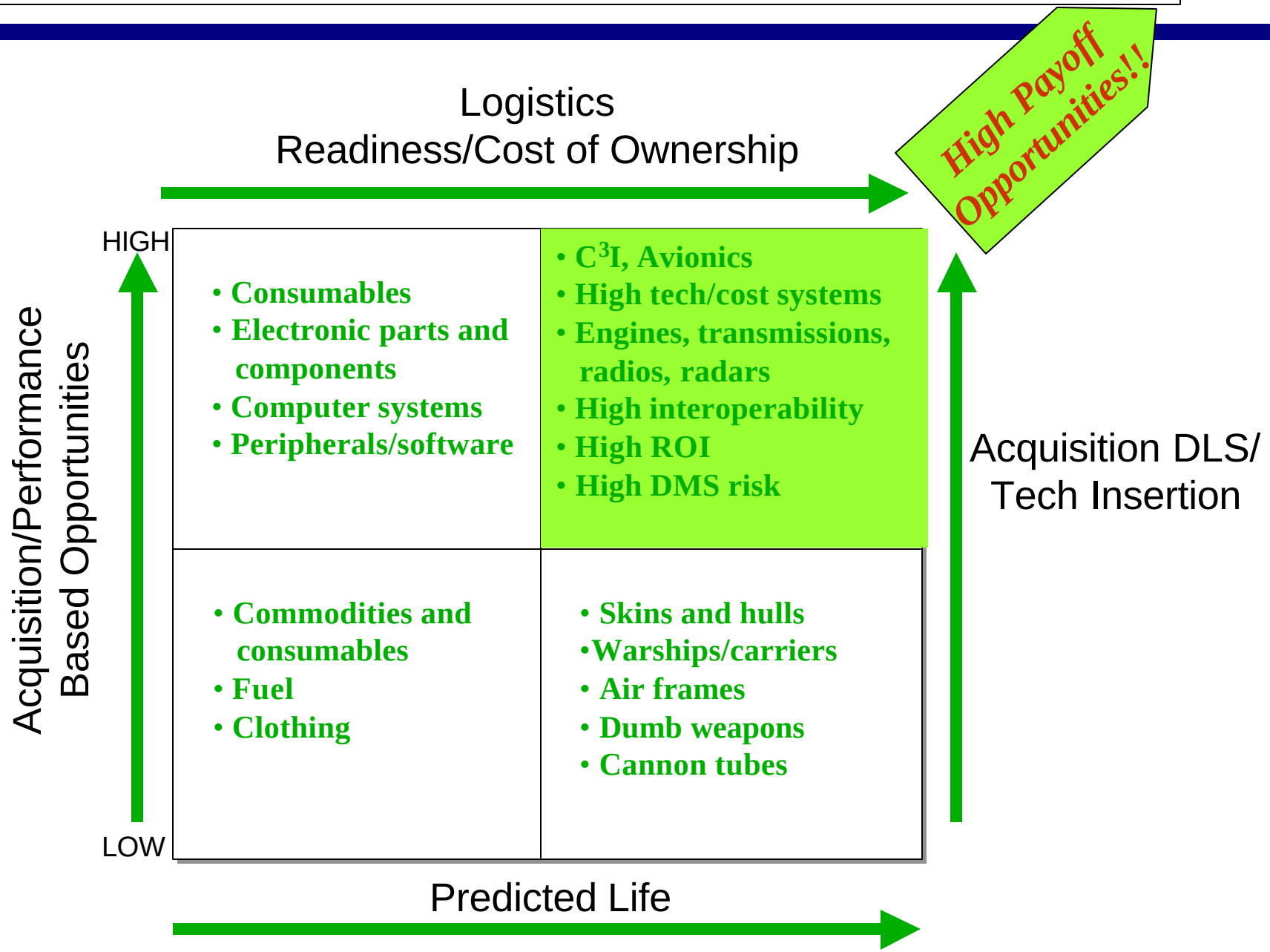
- **Full Funding for system *no later* than Milestone B -** earlier if a follow-on system
- ***Transition funding* -** to support later entry into the acquisition process
- **Funding *sized to buy* -** at Milestone C

Reduce Total Ownership Costs and Improve Affordability

Total Ownership Cost

- **Use *market research* and *commercial products* --** to increase competition
- **Use *Open Systems* Architecture -** to reduce cost of technology insertions
- **Use *Dissimilar Competition* -** non-head-to-head alternatives to meet capability need
- **Increase use of *Simulation Based Acquisition* -** to reduce costs for hardware prototype
- ***Reprocurement reform*** -- based on business case analysis of predicted life, tech insertion opportunities, and cost reduction potential

Reprocurement Reform Opportunities



Reduce Total Ownership Costs and Improve Affordability (con't)

Affordability

- **Value *addressed*** - in the ORD by user
- ***Minimum*** **number of *mission-oriented Key Performance Parameters*** **-** to facilitate cost-performance trades
- ***Affordability analysis*** -- at each milestone decision point

Deploy Interoperable and Supportable Systems

Interoperability

- Interoperability requirements identified as Key Performance Parameters (KPP)
- Use of a C4I Support Plan to discuss how to meet Interoperability KPP
- “System-of-systems” management approach
  - Capstone Requirements Documents
  - MDAs & Testers will ensure thorough understanding of critical system interfaces and flow of consistent/reliable data/information between systems in the battlefield
  - Mutual understanding of key systems in a mission area

Deploy Interoperable and Supportable Systems (con't)

Supportability

- Total life-cycle view, including operations, support, and disposal
- Increased emphasis on human factors and manpower
- Emphasis on reliability built into design
- Requirement for supportability to be addressed in acquisition strategy

Deploy Interoperable and Supportable Systems (con't)

Software

- **Requirement for use of a capability maturity assessment -** achieve level 3 or PM must approve risk mitigation plan and schedule

- **Emphasis on evolutionary (or "spiral") development**

- **Recognition that software development may not use the same model as hardware development**

- **Recognition that software must be mature before deployment** - once maturity proven, software baselined and methodical and synchronized deployment plan implemented

- **Requirement for registration and Clinger-Cohen compliance**

IMPLEMENTATION CHALLENGES

- **Getting agreement on terminology**
- **Employing new product support strategies**
- **Accepting a militarily useful capability early, based on demonstrated technology, and obtaining objective capability when technology matures**
- **Ensuring adequate funding, funding alignment, and “transition funding”**
- **Integrating the test and evaluation community into the new acquisition approach**
- **Ensuring that the workforce (including industry) is adequately trained to successfully implement the new approach**
- **Assuring Congress that the new approach will maintain their visibility into DoD programs and continue their ability to verify DoD’s accountability for program success**

THE FUTURE OF REFORM

"…[T]he U.S. defense establishment must be transformed to address our new circumstance. The need to swiftly introduce new weapons systems is clear."

-- Secretary of Defense Rumsfeld

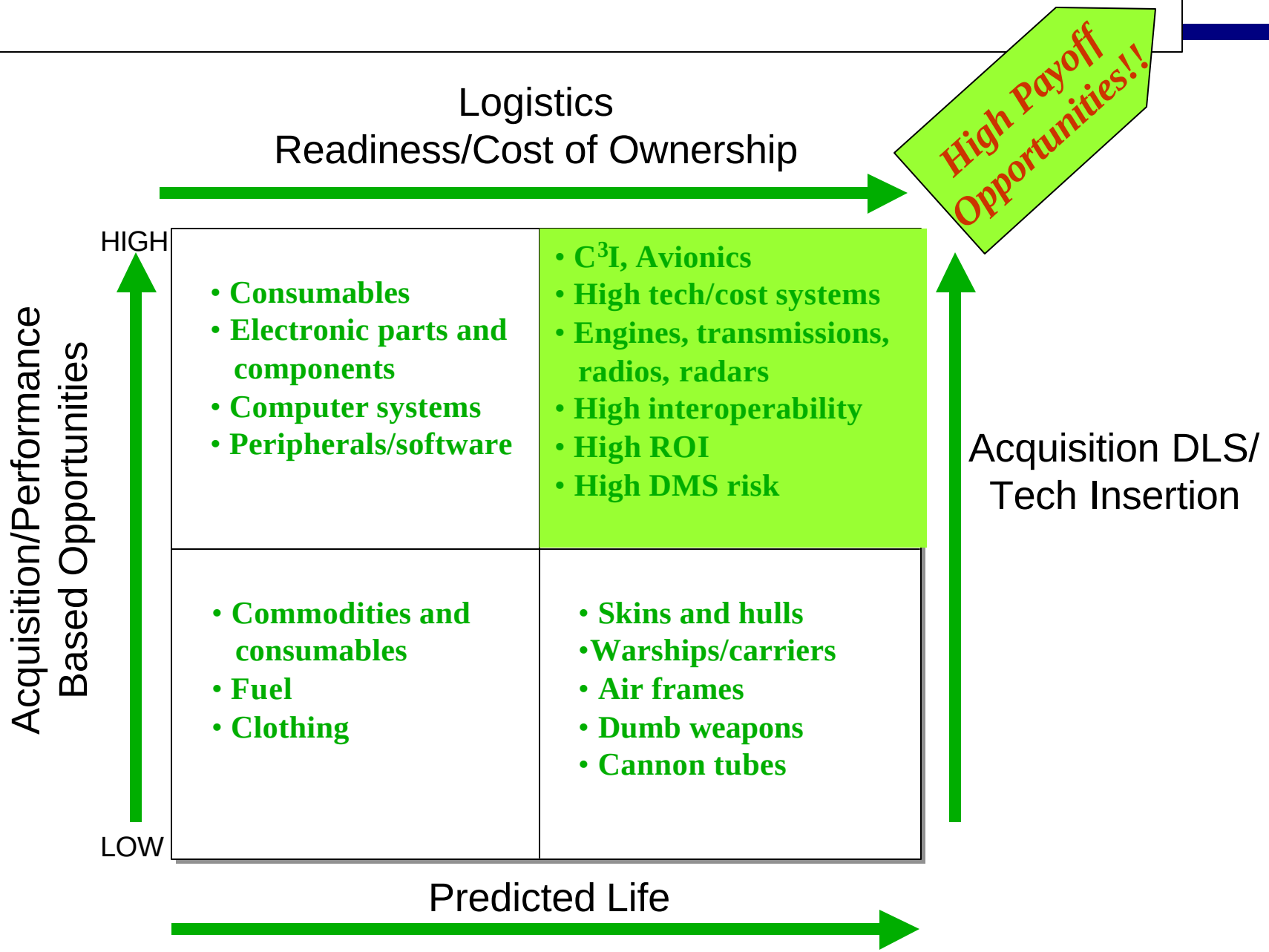
(confirmation testimony, January 11, 2001)

FOR ADDITIONAL INFORMATION

- http://www.acq.osd.mil/ar/ar.htm
- http://www.acq.osd.mil/ara/
- http://www.web2.deskbook.osd.mil/default.asp

Backup Slides

Summary of Findings: Where do Opportunities Exist?



Example 1

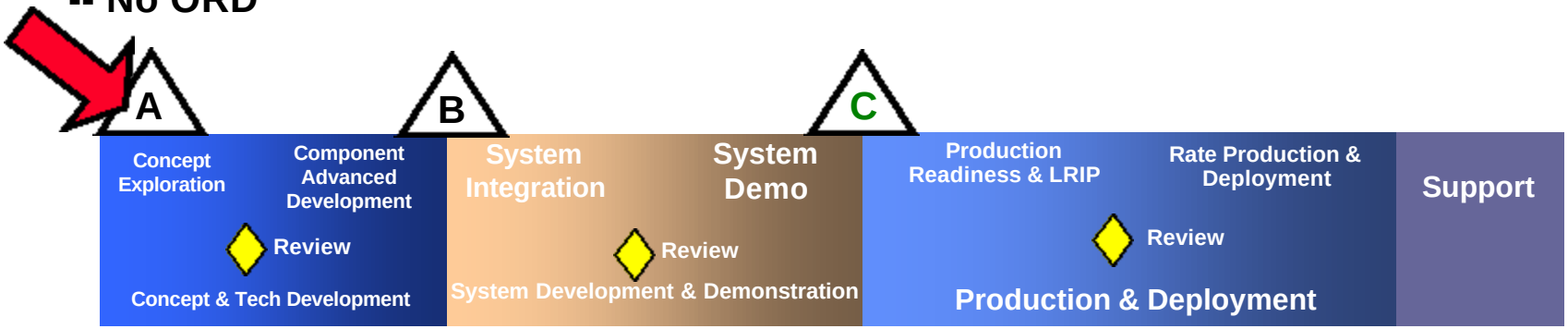
Need some materiel solution to attack space-based warheads

-- Multiple Concepts to explore

-- Technologies immature

-- No ORD

Enter at MS A



Concept Exploration -- look at paper studies of alternative ways of attack

Component Advanced Development -- mature component technologies

System Integration -- development integration of components to meet system requirements

System Demo -- demonstrate product maturity through simulation and test

LRIP -- mature manufacturing capability and operationally test

Full-Rate -- produce system in quantity

Support -- sustain system

Example 2

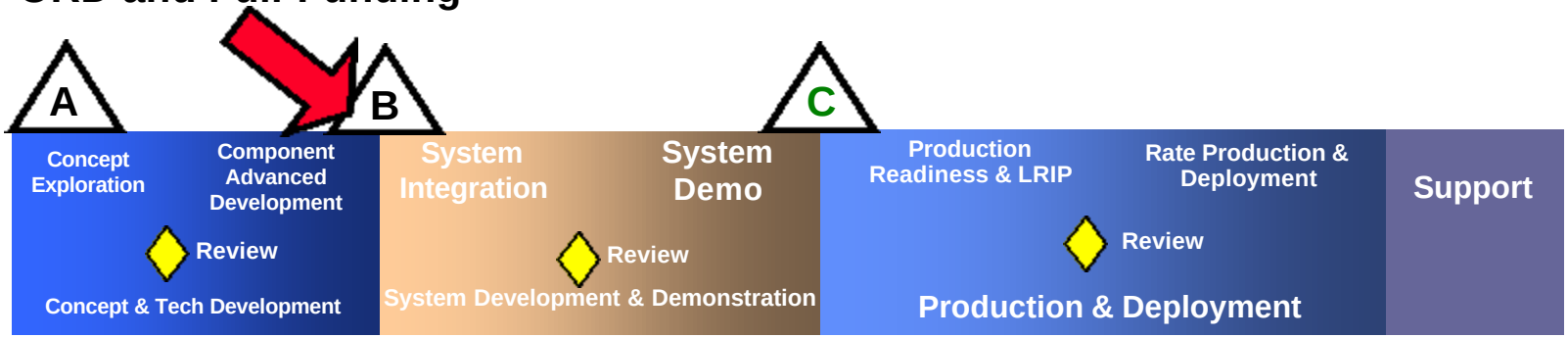
Need new airplane transport to carry heavy and bulking cargo

Enter at MS B

-- Concept/architecture in place

-- Mature technology

-- ORD and Full-Funding



System Integration -- development integration of components to meet system requirements

System Demo -- demonstrate product maturity through simulation and test

LRIP -- mature manufacturing capability and operationally test

Full-Rate -- produce system in quantity

Support -- sustain system

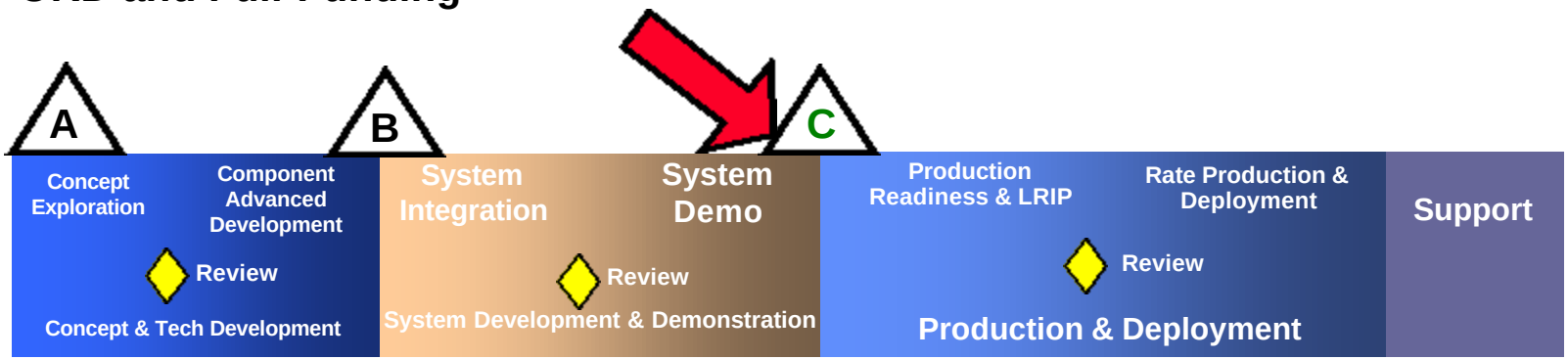
Example 3

Tracking system to keep visibility of issue items

-- Item available without development

-- ORD and Full-Funding

Enter at MS C

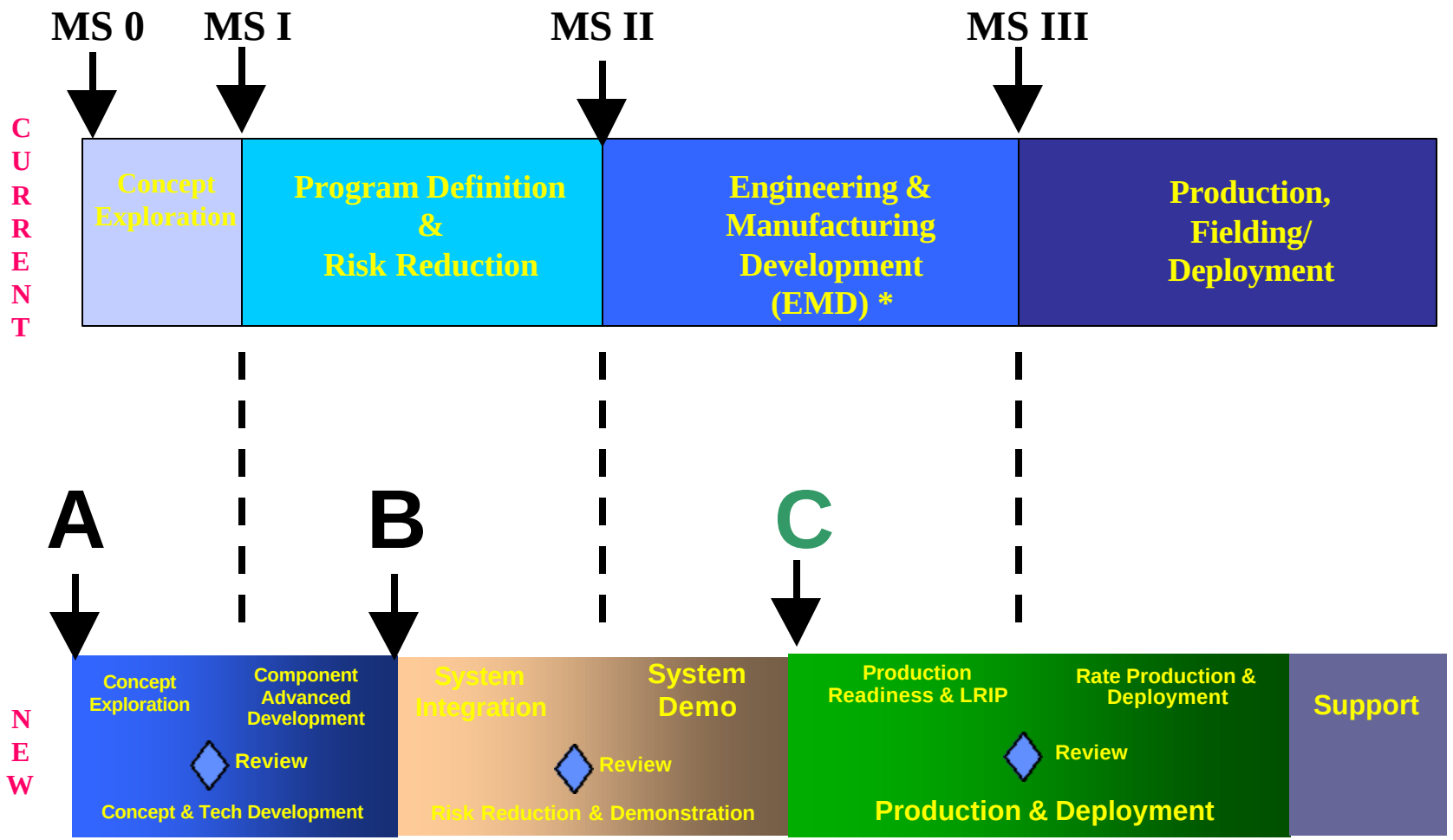


LRIP -- operational test to make sure that it works in our environment

Full-Rate -- produce system in quantity

Support -- sustain system

Model Comparisons



OLD VS. NEW SYSTEM

OLD	NEW
➢ Milestones 0, I, II, III	Milestones A (Analysis), B (Begin Development), C (Commitment)
➢ DAB/DAE/SAE Reviews	DAB/DAE/SAE Reviews Decision/Interim Progress Reviews
➢ Single Entry Point (other entry points "non-traditional")	Multiple Entry Points (other entry points part of system)
➢ Requirements (MNS/ORD)_	Requirements (MNS/Time-Phased ORD)
➢ Full Funding Required at PDRR	Full Funding Required at System Development (or before if platform replacement)
➢ Congressional Visibility, Accountability, Flexibility/OSD & Service Responsibilities	SAME

CONGRESSIONAL ISSUES

Visibility, Accountability, Flexibility oversight mechanisms

- **No Change in Congress's current control over funds, especially for reprogramming and new starts**
- **No Change in major oversight and reporting mechanisms (SAR's, detailed budget justifications, Beyond LRIP Report)**

Outyear Funding

- **Full funding at System Development (or earlier) vice Program Definition and Risk Reduction**
- **DoD commitment still maintained in FYDP**

Getting the Most out of Demonstrations

- **Firm Exit Criteria and Well Defined Deliverables Now Required**

FINANCIAL ISSUES

Adequate Funding

- Need more funding for demonstrations and experiments
- Funding available for technology risk

Funding Alignment

- Financial Management Regulation needs to be updated to match funding “colors” with work in each phase

Transition Funding

- Funding source for programs entering at later milestones

STATUTORY & REGULATORY CHANGES

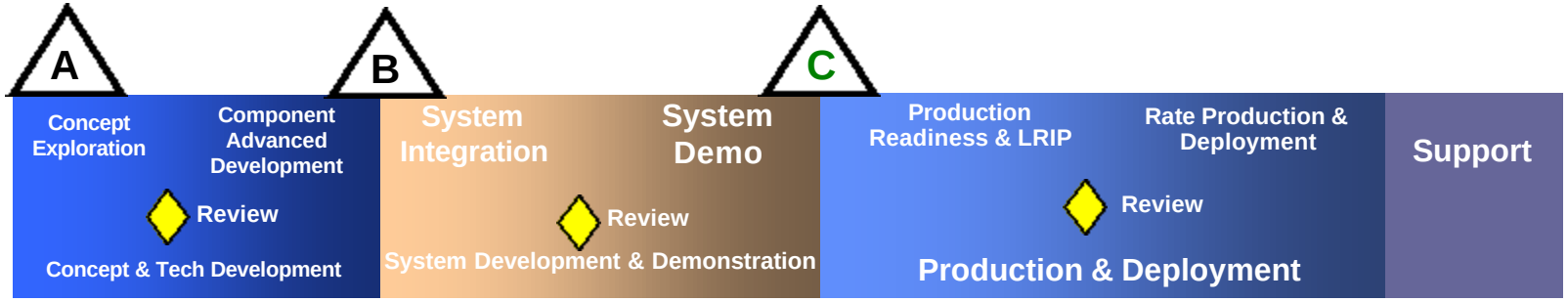
The new approach will require:

- Changes to conform current statutes to new milestone names and phases (e.g., 10 USC 2366, 2399, 2400, 2434, 2435)
- Changes to align statutory requirements with work content (e.g., 10 USC 2399, 2434) - DOT&E and CAIG support
- Changes in Financial Management Regulation to recognize new milestone names and phases

No Substantive Changes to Current Law

CONCEPT OVERVIEW

Programs can enter the process at various points depending on concept and technology maturity



The Following Slides Present Hypothetical System Examples

“Phase A” - Work Content

Concept Exploration

- Paper studies of alternative concepts for meeting a mission
- Exit criteria: Specific concept to be pursued & technology exists.

Component Advanced Development

- Development of subsystems/components that must be demonstrated before integration into a system
- Concept/tech demonstration of new system concepts
- Exit criteria: System architecture & technology maturity

“Phase A” - Examples

Enter at Concept Exploration

Joint Maritime Command & control Capability
- A command platform for the Joint Tactical Forces Commander
- Need to explore various concepts

Hard & Deeply Buried Target Capability
- Need to penetrate buried target
- No specific system concept

Advanced Narrowband System
- Global narrowband communication system composed of multiples segments
- Need to explore various concepts

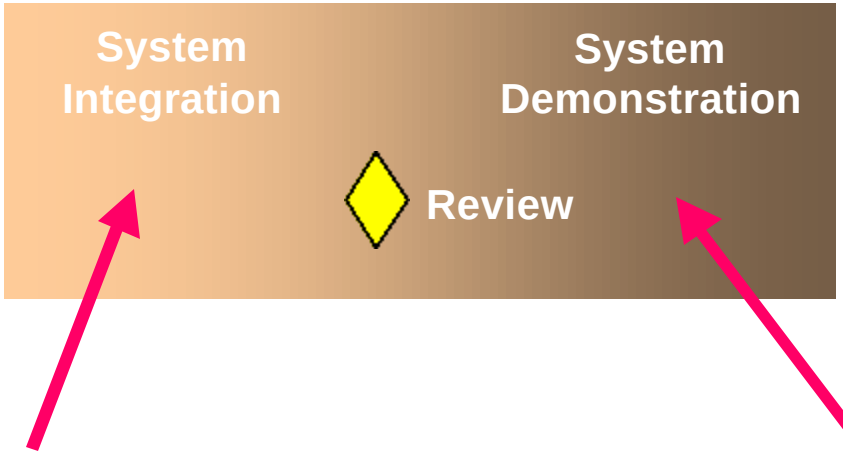
Enter at Component Advanced Development

Airborne Laser
- Airplane Concept, but laser technology not yet mature
- Component work on laser before integration into plane.

JAST
- Airplane Concept but working on technologies used in plane

DD21 -- 21st Century Destroyer
- Ship Concept but component level technology not yet mature.
- Propulsion system, weapon and radar systems in development

“Phase B” - Work Content



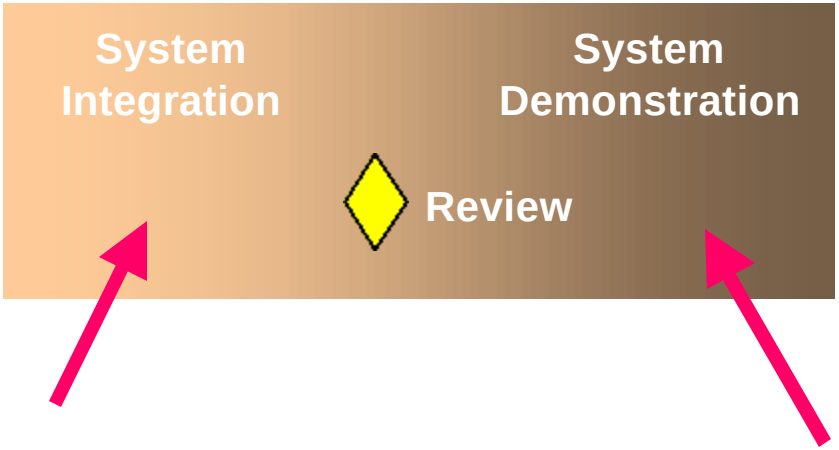
System Integration

- System Integration of demonstrated subsystems and components
- Reduction of integration risk
- Exit criteria: System demonstration in a relevant environment (e., first flight)

System Demonstration

- Complete development
- Demonstrate engineering development models
- Combined DT/OT testing
- Exit criteria: System demonstration in an operational environment

“Phase B” - Examples



Enter at System Integration

F16 Upgrade
- Upgrade to existing plane
- System architecture in place (mud -fighter)
- Mature technology; work focused on integration

Joint Direct Attack Ammunition (JDAM)
- Strap-on guidance kit to enhance accuracy
- System architecture in place (kit on dumb bomb)
- Work focused on integrating kit with smart bomb and reducing risk

CVN 77
- Construction of new Nimitz-class carrier incorporating lessons learned from previous versions

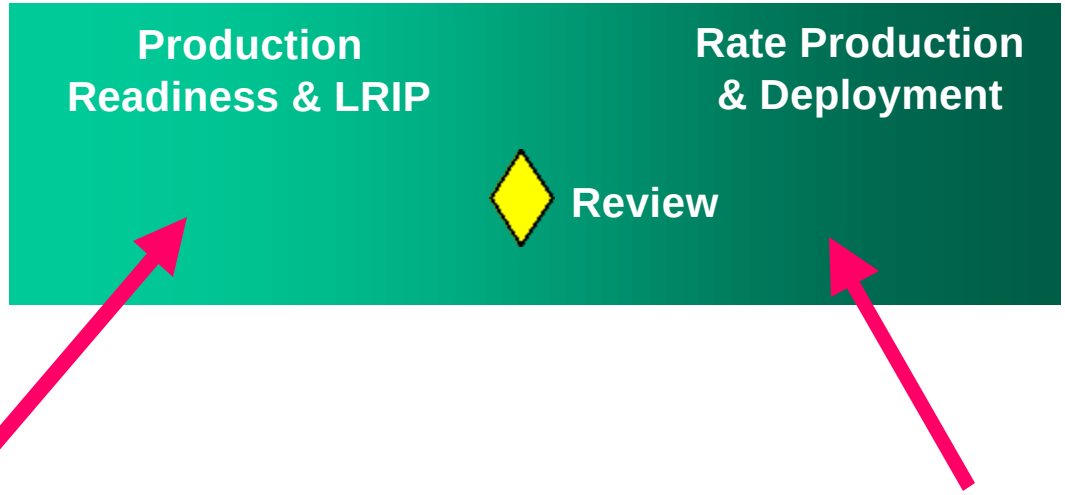
Enter at System Demonstration

Fast Sea Lift Ships
- Commercial ships modified to meet military needs

Joint Primary Aircraft Training System
- Brazilian model selected
- Work focused on integration of subsystems
- (ejection seats) and demonstration

Global Hawk Transition
- UAV program previously an ACTD
- Work focused on upgrading tested system to meet ORD
- Flight test demonstrations continuing

“Phase C” - Work Content



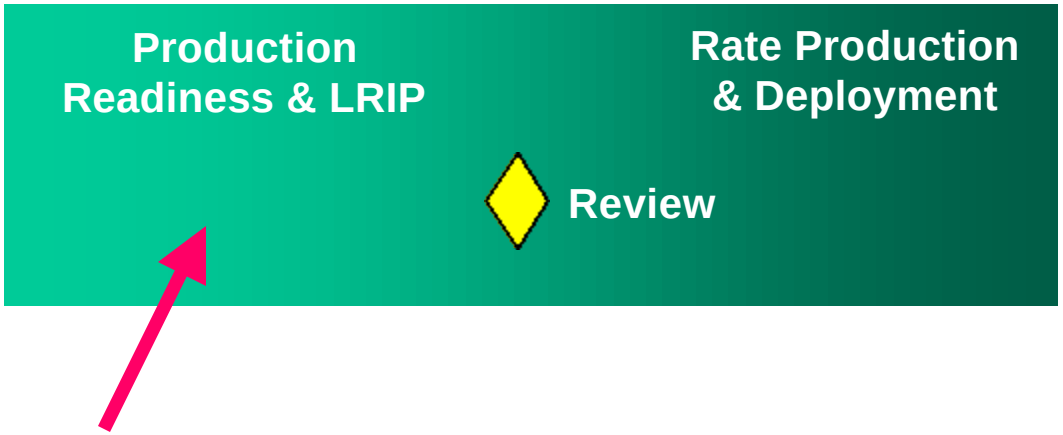
Production Readiness & LRIP

- IOT&E, LFT&E of production-representative articles
- Establish manufacturing capability
- Execute low-rate production
- Exit criterion: Favorable Beyond-LRIP Report

Rate Production & Deployment

- Execute full rate production
- Deploy system

“Phase C” - Examples



Enter at Milestone C

Non-Development Airlift Aircraft
- Procurement of modified commercial Boeing 747
- IOT&E needed to move beyond LRIP

C-9
- Procurement of DC-9 aircraft
- IOT&E needed to move beyond LRIP

Administrative Use Vehicles:
- Buy commercial vehicles for use at post/camps/stations

IMPLICATIONS FOR THE COST COMMUNITY

Cost Estimating

> New documents reviewed by CAIG

> DoD 5000.4-M still applicable (but needs to be updated)

> No change in cost estimating process proposed

Outyear Funding

- Full funding at System Development (or earlier) vice Program Definition and Risk Reduction
- DoD commitment still maintained in FYDP